In The Application Of

THOMAS KARPATI

For An

ATTIC CART DEVICE

Filed With The

United States Patent and Trademark Office

BACKGROUND OF THE INVENTION

Field of the Invention:

The present invention is a cart system, particularly designed for usage in attics and crawl spaces. The system utilizes a platform of previously-determined length, at least one track upon the platform, and a cushioned and wheeled seat component upon the track. In the preferred mode, the device is powered, utilizing an electric motor with chain drive assembly. In an alternate mode, the device is manually powered, such as through usage of pulleys and the like.

Description of the Prior Art:

Numerous innovations for cart devices have been provided in the prior art that are described as follows. Even though these innovations may be suitable for the specific individual purposes to which they address, they differ from the present invention as hereinafter contrasted. The following is a summary of those prior art patents most relevant to the invention at hand, as well a description outlining the differences between the features of the present invention and those of the prior art.

1. United States Patent 5,456,529, invented by Cheung, entitled "Powered Overhead Stowage Bin"

The patent to Cheung describes an overhead stowage system for holding luggage above a seat of an airplane which has a holding bin movably coupled to a support structure of a modular design which may be pre-assembled with the airplane. A motor drives a cable chain which is attached to the holding bin for moving the holding bin with respect to the structure. The motor is operatively coupled to a horizontal shaft which has a length corresponding to the length of the overhead stowage bin and which has an drive sprocket driving the cable chain as it is driven by the motor. A pulley disposed on the support structure redirects the force of the cable chain, as driven by the motor, for lifting the holding bin relative the support structure. The motor provides all or a partial force for lifting the holding bin. Switches and sensors located on the support structure and holding bin operate in accordance with the position of the holding bin relative the support structure for determining when and how the motor is to operate.

2. United States Patent 6,202,359, invented by Reed, entitled "Under Floor Storage System For Building"

The patent to Reed describes a storage system for a building such as a house. Specially sized containers are kept in the unused space under the raised floor of a building. An opening in the floor provides access, and is closeable by a cover. A translation means supports the containers, and moves them from exactly under the opening to a space for stowage. The preferred translation means

includes a rail system supporting a train of serially coupled wagons. Each wagon has a guard sized to receive matingly one container. The train is moveable to align one of the wagons with the floor opening, for access of its container. A dust cover protects the contents. Being transparent, the cover allows quick inspection of the contents. A jack includes moving arms that push the container upwards through an opening in the wagon, and then also through the floor opening. The rail system includes rails that are closed loop, and are either attached to the underside of the floor, or supported by the grade. A drive moves the train by engaging at least one of the wagons. The system can be retrofitted in an existing building, or can be installed with a new building.

3. United States Patent 4,966,513, invented by Motoda, entitled "Indoor Type Mechanized Storage Facility"

The patent to Motoda describes an indoor-type mechanized storage facility which includes a box-shaped casing and an elevator device coupled to the casing. The casing contains a plurality of storage portions which are aligned with each other, and a passageway portion which is formed in front of the storage portions. The elevator device includes an elevator tower which protrudes in a building, and a lifter which supplies the storage unit in the casing to an opened portion of the elevator tower. The casing is disposed in an empty space or below the floor in the building. The mechanized storage facility also includes a conveying car which moves in the passageway portion and conveys the storage unit between the casing and the elevator device, and a control device that controls the operation of the conveying car and that of the elevator device. The conveying car has a

transversely conveying device that conveys the storage unit substantially in the horizontal direction to accommodate it in the storage portion. In consequence, a desired storage unit which is selected from the plurality of storage units can be conveyed onto the floor regardless of the accommodated position of the storage unit so as to enable the objects to be stored in or taken out of the storage unit.

4. United States Patent 6,471,309, invented by Turner, entitled "Storage Unit"

The patent to Turner describes a storage unit having at least one movable storage module. According to the invention, the storage unit includes at least one support device having at least one support rail. A carrying device interconnected to the storage module engages the support device, thereby carrying at least a first portion of the weight of the storage module. A rolling device interconnected to the storage module engages the floor to carry a second portion of the weight of the storage module. The provided storage unit allows heavy loads to be carried by the movable storage module along a path defined by the support device.

5. United States Patent 5,239,790, invented by Fetzer, entitled "Attic Shelf"

The patent to Fetzer describes a pre-assembled attic shelf unit which includes a pair of shelf support members connected to each other with wooden connectors so that outward facing surfaces of the support units are engageable with portions of adjacent roof trusses located on fixed centers. Each shelf support member may be rectangular wooden stock material formed with an elongate

rectangular groove in an inward facing surface thereof so that the opposing grooves respectively receive longitudinal edges of the shelf in sliding supporting engagement. Nails may be utilized to fasten the shelf supporting members directly to the portions of the trusses such as web member portions interconnecting top and bottom chord members of the trusses together.

6. United States Patent 5,242,219, invented by Tomaka, entitled "Between Rafters Storage Device"

In the patent to Tomaka, a storage device for use between exposed rafters of a basement or ceiling is disclosed. The device includes a base and drawer each of rigid welded wire construction. The base is secured by screws to the bottom surface of adjacent rafters to span between them. The base includes tracks in the form of welded wires which define a pair of parallel slots. The wires also define an opening into the slots of the front end of the base. The drawer at the bottom has a pair of spaced apart projecting T-shaped hooks for releasably and slidably engaging the track. The hooks also allow the drawer to hang vertically from the front of the base and to be manually removed and inserted into the slots through the openings. The drawer may be pivoted upward on the hooks and slid with the hooks engaged to a storage position atop the base and between the rafters. The unit's welded wire construction allows the drawer's contents to be readily seen from below when the drawer is in the storage position between. The drawer is formed with security lip at its front end of its open top to help keep stored items even when it is hanging generally vertically from the base for easy access.

7. United States Patent 5,249,858, invented by Nusser, entitled "Motor Driven Movable Cabinet"

The patent to Nusser describes a motor driven movable cabinet that provides top shelf accessibility by being lowered outwardly onto the underlying counter top and retracted back to its original position against the wall. A motor driven threaded screw lifting mechanism powers the cabinet's movement and consists of a reversible electric motor and a drive shaft assembly, including a drive shaft and a threaded screw drive rod. The motor is attached to the drive shaft assembly by a universal joint and a load bearing bracket pivot assembly. This motorized mechanism is then fastened to a wall frame that is secured to the wall behind the cabinet. The cabinet is also attached to the wall frame by at least four L-shaped swing arms and to the motorized mechanism by a pivot mount bracket hingedly attached to the bottom of the cabinet. The pivot assembly supports the drive shaft assembly and the universal joint allows for a change in the angle from the pivot assembly along the drive shaft and threaded screw drive rod to the bottom of the cabinet. The actual raising and lowering operations result when the motor rotates the drive shaft causing the rod to shorten as it screws up into the shaft thereby raising the cabinet. The cabinet is lowered when the threaded screw rod lengthens by unscrewing from the drive shaft. At least four L-shaped swing arms assist the motored mechanism in moving the cabinet by maintaining the cabinet's parallel position to the wall.

8. United States Patent 4,574,962, invented by Tabler et al., entitled "Storage And Retrieval System"

The patent to Tabler describes a storage and retrieval system which has a plurality of conveyor sections mounted one above the other on a frame. Each conveyor section can move a tray with a box of articles thereon between a loading station and a picking station automatically according to a keyboard entry control. Each conveyor section has a plurality of the trays secured together by a driven chain in an endless loop, with the trays being supported on an endless array of horizontal undriven rollers.

9. United States Patent 4,389,157, invented by Bernard II et al., entitled "Retrieval And Storage Mechanism For Use With An Automated Rotating Storage Unit"

In combination with automatic storage and retrieval system having a continuous track which supports a continuous rotating storage unit to move therearound in a horizontal direction, the rotating storage unit including a plurality of horizontally spaced shelves arranged vertically into columns, a conveyor system mounted adjacent the rotating storage unit for moving storage bins towards and away from the rotating storage unit, and an elevator mounted in a fixed position between the rotating storage unit and the conveyor system; a platform mounted in the elevator for vertical movement up and down adjacent the rotating storage unit, an extraction and insertion arm assembly slidably mounted on the platform, the arm assembly including a pair of longitudinally disposed extractor arms having the forward ends extending towards the rotating storage units, a motor for driving the

arm assembly in a horizontal direction towards and away from the rotating storage unit for bin placement in and withdrawal from a preselected shelf; spring loaded flippers mounted on the forward end of each arm for removing a bin from a preselected shelf during the extraction operation; a pusher block mounted on the upper portion of each the arm for pushing a bin onto a preselected shelf during the insertion operation; a conveyor belt assembly mounted on the platform in longitudinal alignment therewith between the extractor arms for aiding the movement of a bin into or withdrawal from a preselected shelf; and retaining bars for securing a bin on the platform.

10. United States Patent 4,699,437, invented by Genereaux, entitled "Apparatus For Storing Objects"

The patent to Genereaux describes a container having a transparent base which is pivotally mounted between the spaced apart rafters in a ceiling so that the container can be maintained in a first relatively fixed position, moved to a second position supported by the pivot mounting so that objects may be placed into or removed from the container or completely removed to be transported to any desired location.

The prior art patents noted above largely entail features such as: systems for usage in vehicles such as airplanes; devices for overhead compartments; conveyor systems for warehouses; motorized organization systems installed below floors of houses and buildings; devices that utilize elevator components to raise and lower boxes for storage; shelving units for attics and crawl spaces; and various motor-driven movable cabinets, including rotatable storage compartments.

In contrast, the present invention is a cart system for usage in attics and crawl spaces, including a platform, track, wheeled seat component, and electric motor with chain drive. The motor activates the chain drive to move the seat component forwardly or backwardly along the track at a slow pace, including on turns, if necessary. The system also includes sensors which stop the seat at each end of the track and the platform may be of any length to cover the size of the attic or crawl space. The system allows the user to sit atop the device in a crouched position and move with storage items when headroom is limited, such with a low-pitched roof. Enhanced versions of the system include shelves on the cart, to help the user move larger or heavier items.

SUMMARY OF THE INVENTION

As noted, the present invention is a cart system, particularly designed for usage in attics and crawl spaces. The system utilizes a platform of previously-determined length, at least one track upon the platform, and a cushioned and wheeled seat component upon the track. In the preferred mode, the device is powered, utilizing an electric motor with chain drive assembly. In this mode, when the motor is engaged via manual switch or remote control, the motor activates the chain drive assembly to move the seat component along the track at a relatively slow pace, forwardly, backwardly, or on turns. In the preferred mode of production, the system also includes sensors which function to stop the seat portion should the same move too close to an end of the platform.

Alternatively, the system may be manually powered, such as through usage of pulleys or the like. This provides a simpler, less expensive assembly that is still effective to accomplish the purposes of the invention.

Importantly, in either embodiment, the platform may be of any length suitable to adequately cover the length of an attic or crawl space. This allows the user to sit atop the device in a crouched position and move across the area with boxes or storage items when headroom is at a minimum, such as due to a low-pitched roof. The system may also include shelves to carry larger items. In addition, the system utilizes simple pre-existing components, such as a garage door opener motor and related

The system may also include shelves to carry larger items. In addition, the system utilizes simple pre-existing components, such as a garage door opener motor and related chains, and may be modular, so that the system can be easily installed in a user's attic or crawl space.

In light of the foregoing, it is generally an object of the present invention to provide a device that allows one to conveniently move through an attic or crawl space for ease in storing and retrieving items therein.

It is also an object of the present invention to provide a device that utilizes either an existing electric motor and chain drive assembly, or that is engaged manually using a pulley assembly.

It is a further object of the invention to provide a device that is simple to manufacture and install.

It is a further object of the invention to provide a device that utilizes a variety of previously existing components, reducing the cost of manufacture and production.

It is a further object of the present invention to provide a device that may be configured in a variety of shapes and sizes, according to user need.

In addition, it is an object of the present invention to provide a device that comprises multiple safety features.

It is an object of the present invention to provide a device that may include text or graphics thereon, for the purposes of instruction or advertisement.

It is also an object of the present invention to provide a device that may include shelves thereon for user convenience.

Finally, it is an object of the present invention to provide alternate embodiments of the device, wherein the invention is constructed of different materials, according to manufacturer and user needs.

The novel features which are considered characteristic for the invention are set forth in the claims. The invention itself, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of the embodiments when read and understood in connection with accompanying drawings.

BRIEF DESCRIPTION OF PREFERRED EMBODIMENTS

FIGURE 1 is a front, three-quarter perspective view of the present invention, illustrating the principal components of the attic device, including platform (12), at least one track (14), carrier member (16), which comprises carrier top surface (16A) and carrier bottom surface (16B), cushion portion (18), plurality of wheels (20), motor housing (22), drive linkages (24), which may be in the form of chains or ropes, housing at opposite end from motor (26), and box or storage item being moved (28).

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The following description relates to FIGURE 1, which is a front, three-quarter perspective view of the present invention. Illustrated are the platform (12), at least one track (14), carrier member (16), which comprises carrier top surface (16A) and carrier bottom surface (16B), cushion portion (18), plurality of wheels (20), motor housing (22), drive linkages (24), which may be in the form of chains or ropes, housing at opposite end from motor (26), and box or storage item being moved (28).

Specifically, the platform (12) is a substantially flat elongated member, of a length suitable to cover the attic or crawl space in question. Preferably constructed of wood, the platform has sufficient strength to hold the remaining components of the present invention, at least one user thereon, and the items that the user desires to transport for storage.

The platform comprises at least one track (14) running near an outer edge of the length of the platform. In one embodiment, each both the right and left sides of the top surface of the platform member have elongated tracks thereon.

A carrier member (16) sits atop the platform member, and functions to transport at least one user, as well as items being transported for storage purposes. The carrier member (16) comprises a carrier top surface (16A) and carrier bottom surface (16B). In the preferred mode of production, a cushioned portion (18) is located on the carrier top surface (16A) to allow for a comfortable device on which a user can kneel or sit.

The carrier member (16) comprises a plurality of wheels (20) upon carrier bottom surface (16B). The wheels (20) are in a position to be received by the track (14) which is located upon the platform (12). As such, the wheels (20) are located at the left and right sides of the carrier member bottom surface (16B), allowing the carrier member (16) to roll freely upon the platform (12), when the system is engaged by the user via powered or manual means.

As previously noted, in the preferred mode of production, the attic cart device utilizes electrical power, much in the manner as a previously-existing garage door opener assembly. As such, the powered mode of the attic cart device comprises a motor housing (22), and plurality of drive linkages (24), which may be in the form of chains or ropes. Moreover, as shown in FIGURE 1, a housing for same is located at an opposite end from motor (26). In this mode, when the motor is engaged via manual switch or remote control, the motor activates the drive assembly to move the carrier member (16) along the track (14) at a relatively slow pace, forwardly, backwardly, or on turns. In the preferred mode of production, the attic cart device also includes sensors which function to stop the seat portion should the same move too close to an end of the platform. This assembly

allows the user to conveniently load and move a box or storage item being (28), with minimal physical effort.

Furthermore, as previously noted, the attic cart device may be manually powered, providing a less expensive alternative mode of manufacture and production. In this instance, the platform (12), at least one track (14), and carrier member (16) are much the same as in the previous embodiment, with the exception that a manually-engageable pulley system or chains or ropes is utilized.

Importantly, in either embodiment, the platform may be of any length suitable to adequately cover the length of an attic or crawl space. This allows the user to sit atop the device in a crouched position and move across the area with boxes or storage items when headroom is at a minimum, such as due to a low-pitched roof. It should be noted that the attic cart may also include one or more shelves thereon, to allow the user to conveniently transport larger items.

In general, the present invention may also be manufactured in a variety of sizes for the utmost in versatility. For the purposes of example, the platform may be produced in several lengths suitable to accommodate attics or crawl spaces of several common lengths and sizes.

In addition, the invention may also utilize simple pre-existing components that are modular in nature, so that the system can be easily installed in any attic or crawl space.

Moreover, any embodiment of the attic cart device may include text or graphics thereon, for the purposes of instruction or advertisement.

With regards to all descriptions and graphics, while the invention has been illustrated and described as embodied, it is not intended to be limited to the details shown, since it will be understood that various omissions, modifications, substitutions and changes in the forms and details of the device illustrated and in its operation can be made by those skilled in the art without departing in any way from the spirit of the invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can readily adapt it for various applications without omitting features that, from the standpoint of prior art, constitute essential characteristics of the generic or specific aspects of this invention. What is claimed as new and desired to be protected by Letters Patent is set forth in the appended claims.